Remarks

Applicants thank the Examiner for kindly allowing claims 25-31, 34-38 and 42-50 and for indicating claims 5, 6, 8 and 18-21 would be allowable if rewritten in independent form.

Claims 1, 32, 33, 39-41, and 51 have been amended. New claim 52 has been added. Claims 39-41 and 51 have been amended to correct inadvertent clerical and typographical errors and not for reasons related to patentability. Support for the amendments to claims 1, 32, and 33 and new claim 52 can be found in general in Applicants' Specification and in particular, for example, as follows: claims 1, 32, and 33 page 4, line 23; claim 52, original claim 7 and page 4, lines 15-19. Applicants retain the right to prosecute the amended claims in their original form in a continuing application.

Applicants submit that the amendments to claims 39 and 51, which were made to correct inadvertent typographical and clerical errors, render moot the objections to claims 39 and 51 under 37 CFR 1.75(c).

Applicants submit that the amendments to claims 40 and 41, which were made to correct inadvertent typographical errors, render moot the objections to claims 40 and 41 under 35 U.S.C. § 112, second paragraph.

Claims 1, 3, 4, 7, 12, 14-17, 22, 32 and 33 stand rejected under 35 U.S.C. § 103 over Popov et al. in view of Angadjivand et al.

Claim 1 is directed to a method of making an electret. The method includes condensing vapor from the atmosphere of a controlled environment of a chamber onto a dielectric article. Neither Popov et al. nor Angadjivand et al. teach or suggest condensing vapor from the atmosphere of a controlled environment of a chamber onto a dielectric article. Thus, the proposed combination of Popov et al. and Angadjivand et al. lacks a required element of claim 1. Applicants submit, therefore, that the amendment to claim 1 renders moot the rejection of claim 1 under 35 U.S.C. § 103 over Popov et al. in view of Angadjivand et al. and request that it be withdrawn.

Claims 3, 4, 7, 12, 14-17, 22, 32 and 33 are distinguishable over Popov et al. in view of Angadjivand et al. for at least the same reasons set forth above in distinguishing claim 1.

Claims 10, 11 and 13 stand rejected under 35 U.S.C. § 103 over Popov et al. in view of Angadjivand et al. and further in view of Coufal et al. Claims 10, 11 and 13 depend from claim 1 and are distinguishable under 35 U.S.C. § 103 over Popov et al. in view of Angadjivand et al. and further in view of Coufal et al. for at least the same reasons set forth above in distinguishing claim 1.

Claims 1, 3, 4, 7, 9-11, 14-17, 22, 32 and 33 stand rejected under 35 U.S.C. § 103 over Angadjivand et al. in view of Pike et al.

Angadjivand et al. is directed to a method of charging electret filter media. The method includes impinging jets of water or a stream of water droplets on a fibrous web. Angadjivand et al. disclose that hydrocharging of the web is carried out by impinging jets of water or a stream of water droplets onto the web at a pressure sufficient to provide the web with filtration enhancing electret charge. Angadjivand et al. further disclose that generally pressures in the range of about 10 psi to 500 psi are suitable.

Pike et al. disclose splittable conjugated fibers in which the components of the fiber dissociate when contacted with a hot aqueous fibrillation-inducing medium. Pike et al. disclose that the splittable conjugate fiber should have a cross-sectional configuration that is amenable to partial or complete dissociation. Pike et al. further disclose a method for splitting the conjugate fiber that includes contacting the conjugate fibers with a hot aqueous split inducing medium such as a hot water bath or a spray of hot water or steam. Claim 1 is directed to a method of making an electret where the method includes condensing vapor from the atmosphere of a controlled environment of a chamber onto a dielectric article to form a condensate thereon, said dielectric article having a resistivity of greater than 10^{14} ohms-cm and being disposed in the controlled environment, and drying the article to remove the condensate. Neither Angadjivand et al. nor Pike et al. teach or suggest condensing vapor from the atmosphere of a controlled environment of a chamber onto a dielectric article. Applicants submit, therefore, that the rejection of claim 1 under 35 U.S.C. § 103 over Angadjivand et al. in view of Pike et al. has been rendered moot in light of the amendment to claim 1, and request that rejection be withdrawn.

The rejection of claim 1 under 35 U.S.C. § 103 over Angadjivand et al. in view of Pike et al. is further deficient for at least the following additional reasons. It is undisputed that Angadjivand et al. fail to teach condensing vapor from the atmosphere of a controlled environment onto a dielectric article to form a condensate thereon. To establish a prima facie case of obviousness based upon a proposed combination of references there must be a teaching, suggestion or motivation in the prior art for making the proposed combination. See M.P.E.P. 2142; Fromson v. Anitec Printing Plates, Inc., 132 F.3d 1437 (Fed. Cir. 1997); C.R. Bard, Inc. v. M3 Sys., Inc., 157 F.3d 1340, 1352, (Fed. Cir. 1998). In addition, there must be a reasonable expectation of success. M.P.E.P. 2142. In other words, the proposed combination must provide the skilled artisan with "a reasonable expectation that the beneficial result will be achieved." In re Merck & Co., 800 F.2d 1091, 1097 (Fed. Cir. 1986). The suggestion or motivation to make the claimed combination and the reasonable expectation of success must both be found in the prior art and must not be based on Applicants' disclosure. See M.P.E.P. 2142. Here there is no such teaching, suggestion, or motivation. In addition, there is nothing in Angadjivand et al. or Pike et al to provide the skilled artisan with a reasonable expectation of successfully preparing an electret from the combination of Angadjivand et al. and Pike et al. as proposed in the Office action.

The purpose of the method of Pike et al. is to split a fiber that includes a cross-sectional configuration that is amenable to partial or complete dissociation, i.e., splittable. Therefore, the skilled artisan, familiar with Angadjivand et al. (which is directed to electrets) would have no reason to look to Pike et al. Moreover, Angadjivand et al. disclose that hydrocharging is carried out by impinging jets of water or a stream of water droplets on a web at a pressure sufficient to provide the web with a filtration enhancing electret charge. Angadjivand et al. state, "Generally, pressures in the range of about 10 to 500 psi ... are suitable" (col. 3, line 67-col. 4, line 1). Thus, Angadjivand et al. disclose that there must be sufficient pressure applied by the impinging jets of water or the stream of water droplets to achieve an electret. Nothing in Pike et al. teaches or suggests that steam will provid pressure sufficient to impart an electret charge to a web as required by Angadjivand et al. Therefore the skilled artisan would have no reason to employ steam in

the method of making an electret, and further would have no reasonable expectation that steam would produce an electret. Applicants submit, therefore, that a prima facie case of obviousness has not been made. Accordingly, for at least these additional reasons the rejection of claim 1 under 35 U.S.C. § 103 over Angadjivand et al. in view of Pike et al. cannot stand and must be withdrawn.

Claims 3, 4, 7, 9-11, 14-17, 22, 32 and 33 are distinguishable over Angadjivand et al. in view of Pike et al. for at least the same reasons set forth above in distinguishing claim 1.

The claims now pending in the application are in condition for allowance and such action is respectfully requested. The Examiner is invited to telephone the undersigned should a teleconference interview facilitate prosecution of this application.

Please charge any additional fees that may be required or credit any overpayment made to Deposit Account No. 501,171.

Respectfully submitted,

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LISTING OF THE CLAIMS

1.(Currently amended) A method of making an electret comprising:

condensing vapor from the atmosphere of a controlled environment of a chamber onto a dielectric article to form a condensate thereon, said dielectric article having a resistivity of greater than 10^{14} ohms-cm and being disposed in said controlled environment; and

drying the article to remove the condensate,

wherein the electret exhibits a persistent electric charge.

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Claim 2 (cancelled)

3.(Original) The method of claim 1, wherein the dielectric article comprises a nonconductive polymeric material.

4. (Original) The method of claim 1, wherein the condensate includes a polar liquid.

5. (Original) The method of claim 1, wherein the controlled environment further comprises a liquid, and the method further comprises:

placing the article in the liquid before condensing the vapor; and

decreasing the pressure on the atmosphere such that at least a portion of the liquid evaporates into the atmosphere.

6. (Original) The method of claim 1, wherein the step of condensing the vapor comprises increasing the pressure on the atmosphere such that the vapor condenses on the article.

7. (Original) The method of claim 1, wherein the step of condensing comprises placing an article at temperature T1 in contact with the vapor, the vapor being at a

temperature T2, where T1 is sufficiently less than T2 such that the vapor condenses on the article.

8. (Original) The method of claim 1, wherein the step of condensing comprises an adiabatic expansion.

9. (Original) The method of claim 1, wherein the controlled environment comprises a vacuum chamber.

10. (Original) The method of claim 4, wherein the polar liquid is an aqueous liquid.

11. (Original) The method of claim 1, wherein the condensate consists essentially of water.

12. (Original) The method of claim 1, wherein the condensate is selected form the group consisting of acetone, methanol, ethanol, liquid carbon dioxide, butanol, or a combination thereof.

13. (Original) The method of claim 1, wherein the condensate comprises a fluorocarbon.

14. (Original) The method of claim 1, wherein the article is nonwoven fibrous web.

15. (Previously Amended) The method of claim 14, wherein the nonwoven fibrous web comprises microfibers.

16. (Original) The method of claim 15 wherein the microfibers are melt blown.

17. (Original) The method of claim 16, wherein the melt blown microfibers comprise polypropylene, poly-(4-methyl-1-pentene) or a combination thereof.

18.(Previously Amended) The method of claim 1, wherein the controlled environment further comprises a liquid, and the method further comprises

altering a first property of the environment such that at least a portion of the liquid evaporates into the atmosphere; and

altering a second property of the environment such that the vapor condenses on the surface of the article.

19.(Original) The method of claim 18, wherein the first property is selected from the group consisting of pressure, volume or temperature, or a combination thereof, and wherein the second property is selected from the group consisting of pressure, volume or temperature, or a combination thereof.

20.(Original) The method of claim 19, wherein the first property comprises pressure and the second property comprises pressure.

21.(Original) The method of claim 19, wherein the first property comprises volume and the second property comprises volume.

22.(Original) The method of claim 1, wherein the electret exhibits persistent electric charge, wherein the dielectric article comprises a nonconductive polymeric material and wherein the condensate comprises a polar liquid.

Claims 23 and 24 (withdrawn)

25.(Previously Amended) A method of making an electret, which method comprises:

placing a dielectric article in a liquid of a controlled environment;

condensing vapor from the atmosphere of the controlled environment onto the dielectric article to form a condensate thereon;

decreasing the pressure on the atmosphere of the controlled environment such that at least a portion of the liquid evaporates into the atmosphere; and then

drying the article.

26.(Previously Added) A method of making an electret, which method comprises:

condensing vapor from the atmosphere of a controlled environment onto a dielectric article to form a condensate thereon, said condensing comprising increasing the pressure on the atmosphere of the controlled environment such that the vapor condenses on the article; and then

drying the article.

27.(Previously Added) A method of making an electret, which method comprises:

condensing vapor from the atmosphere of a controlled environment onto a dielectric article by an adiabatic expansion to form a condensate on the dielectric article; and then

drying the article

28. (Previously Added) A method of making an electret, which method comprises:

altering a first property of a controlled environment comprising atmosphere and liquid such that at least a portion of the liquid evaporates into the atmosphere to form vapor;

altering a second property of the environment such that the vapor condenses on the surface of a dielectric article; and then

drying the article.

29. (Previously Added) The method of claim 28, wherein the first property is selected from the group consisting of pressure, volume or temperature, or a combination thereof, and wherein the second property is selected from the group consisting of pressure, volume or temperature, or a combination thereof.

30. (Previously Added) The method of claim 29, wherein the first property comprises pressure and the second property comprises pressure.

31. (Previously Amended) The method of claim 29, wherein the first property comprises volume and the second property comprises volume.

32.(Currently Amended) A method of making an electret, which method comprises:

condensing vapor from the atmosphere of a controlled environment of a chamber onto a dielectric article to form a condensate thereon, the dielectric article comprising a nonconductive polymeric material, and the condensate comprising a polar liquid; and

drying the article to form an electret exhibiting a persistent electric charge.

33.(Currently Amended) A method of making an electret comprising:

altering at least one property of a controlled environment of a chamber so as to cause vapor of the atmosphere of the controlled environment to condense on a dielectric article having a resistivity of greater than 10^{14} ohms-cm, said dielectric article being disposed in said controlled environment; and

drying the article to remove the condensate,

wherein the electret exhibits a persistent electric charge.

34. (Previously Added) A method of making an electret, which method comprises:

altering the volume of a controlled environment that comprises atmosphere and liquid such that at least a portion of the liquid evaporates into the atmosphere to form vapor;

altering the volume of the environment such that the vapor condenses on the surface of a dielectric article; and then

drying the article.

35. (Previously Added) A method of making an electret comprising:

altering at least one property of a controlled environment so as to cause the vapor of the atmosphere of the controlled environment to condense on a dielectric article having a resistivity of greater than 10^{14} ohms-cm, said property being selected from the group consisting of volume, pressure or temperature of the controlled environment; and

drying the article.

36. (Previously Added) The method of claim 25, wherein the electret exhibits a persistent electric charge.

37. (Previously Added) The method of claim 25, wherein the dielectric article comprises a nonconductive polymeric material.

38. (Previously Added) The method of claim 25, wherein the condensate that forms when the vapor condenses on the dielectric article includes a polar liquid.

39.(Currently Amended) The method of claim ~~25~~ 35, wherein the controlled environment further comprises a liquid, and the method further comprises:

placing the article in the liquid; and

decreasing the pressure on the atmosphere such that at least a portion of the liquid evaporates into the atmosphere.

40. (Currently Amended) The method of claim ~~25~~ 35, wherein altering the property comprises increasing the pressure on the atmosphere such that the vapor condenses on the article.

41. (Currently Amended) The method of claim ~~25~~ 35, wherein said altering comprises an adiabatic expansion.

42. (Previously Added) The method of claim 25, wherein the controlled environment comprises a vacuum chamber.

43. (Previously Added) The method of claim 38, wherein the polar liquid is an aqueous liquid.

44. (Previously Added) The method of claim 38, wherein the condensate consists essentially of water.

45. (Previously Added) The method of claim 38, wherein the condensate is selected form the group consisting of acetone, methanol, ethanol, liquid carbon dioxide, butanol, or a combination thereof.

46. (Previously Added) The method of claim 38, wherein the condensate comprises a fluorocarbon.

47. (Previously Added) The method of claim 38, wherein the article is nonwoven fibrous web.

48. (Previously Added) The method of claim 47, wherein the nonwoven fibrous web comprises microfibers.

49. (Previously Added) The method of claim 48, wherein the microfibers are melt blown.

50. (Previously Added) The method of claim 49, wherein the melt blown microfibers comprise polypropylene, poly-(4-methyl-1-pentene), or a combination thereof.

51. (Currently Amended) The method of claim ~~25~~ 33, wherein the controlled environment further comprises a liquid, and the method further comprises altering a first property of the environment such that at least a portion of the liquid evaporates into the atmosphere.

52.(New) A method of making an electret in a chamber comprising a controlled environment comprising an atmosphere comprising vapor conditioned to a temperature of T2, the method comprising:

condensing the vapor from the atmosphere onto a dielectric article having a resistivity greater than 10^{14} ohms-cm and a temperature T1; and

drying the article to remove the condensate,

the electret exhibiting a persistent electric charge.